

AMENDMENTS TO THE CLAIMS

- 1-6 (canceled)
7. (currently amended) A self-addressing control unit system for controlling a sequence of or an array of display signs comprising:
- a) a plurality of control units each associated with a portion of the display sign array and all electrically interconnected by a physical or logical parallel electrical bus having multiple connections, wherein said electrical bus further comprises a main data bus, an addressing line, and a main feedback line, and wherein said electrical bus transfers data or power between the control units;
 - b) a master or remote controller electrically interconnected with the plurality of control units by the electrical bus;
 - c) a communication device associated with the master or remote controller for communicating a signal to the plurality of control units along the main data bus;
 - d) a transmission receiver within each of the plurality of control units that receives an address from a previous control unit along the addressing line;
 - e) a calculator or computer within each of the plurality of control units wherein the address for that control unit is computed by performing a mathematical operation that changes the address received from the previous control unit via the addressing line;
 - f) memory storage within each of the plurality of control units wherein the address of that control unit is stored internally within the control unit; and~~[,]~~
 - g) a transmitter within each of the plurality of control units that sends its address to a next control unit via the addressing line;
- whereupon when one of said plurality of control units fails, a new or replacement control unit will be installed and automatically re-address itself in the system ~~whenever it receives by receiving an initial address from a previous or prior control unit, performing the~~

mathematical operation on that initial address to produce a new address, and storing that new address in the memory as its newly present address in the control unit.

8. **(previously presented)** The system of claim 7 wherein the mathematical operation comprises adding a constant to the initial address to produce the new address.
9. **(previously presented)** The system of claim 8 wherein the constant is one.
10. **(previously presented)** The system of claim 7 wherein each control unit includes a non-volatile memory in which it stores its address.
11. **(currently amended)** The self-addressing control unit system of claim 7 wherein the master or remote controller:
 - transmits an initial address to the first of the plurality of control units on the addressing~~a first global transmission~~ line of the bus;
 - transmits data on ~~a second global transmission line of the main data bus~~;
 - separates data transmission into parts, each part being a packet of data;
 - assigns an address to each packet of data, wherein each said assigned address represents the address of the control unit that will process that packet of data; and~~[,]~~
 - transmits~~retrieves~~ packets of data on the feedback~~a third global transmission line of the signal bus~~ from any one of the plurality of control units by specifying its address on the main data bus~~second transmission line~~.
12. **(currently amended)** The self-addressing control unit system of claim 11 further comprising a transmitter that sends data packets from every control unit to a key module over the main data bus~~third transmission line~~ when the address of that control unit is specified by the key module.
13. **(previously presented)** The system of claim 11 wherein each control unit has a feedback line to every other control unit.

14. **(currently amended)** A self-addressing control unit
- that is associated with a portion of a display sign sequence or array, and
 - used in a self-addressing control unit system for controlling the sequence or array,
 - said system having a plurality of control units interconnected by a physical or logical parallel electrical bus having multiple connections,
 - wherein said bus transfers data or power between the plurality of control units,
- said control unit comprising:
- a) a transmission receiver that receives an address from a first other control unit in the system;
 - b) a calculator or computer that computes a new address for the control unit by performing a mathematical operation that changes the address received from the first other control unit;
 - c) memory storage that stores its new address of the control unit; and[[,]]
 - d) a transmitter that sends its new address to a second other control unit.
15. **(previously presented)** The control unit of claim 14 wherein the mathematical operation comprises adding a constant to the address received from the first other control unit to produce its new address.
16. **(previously presented)** The control unit of claim 14 wherein the constant is one.
17. **(currently amended)** The system of claim 13 wherein the control units look to the ~~addressing~~~~second global transmission~~ line for an address and read a block of data that is specifically associated with its address.

18. **(previously presented)** A method of networking a plurality of self-addressing control units for controlling a sequence of or an array of display signs comprising:
- a) providing a plurality of control units each containing storage memory and each associating with a portion of the display sign array and all electrically interconnecting by a physical or logical parallel electrical bus having multiple connections, wherein said bus transfers data or power between the control units;
 - b) providing a master or remote control electrically interconnecting with the plurality of control units by the bus;
 - c) communicating with the master or remote controller for communicating a signal to the plurality of control units along the bus by sending a system start-up signal from the controller to the plurality of control units;
 - d) causing each control unit to calculate an address associated with that control unit by receiving an initial address from a first other control unit, performing a mathematical operation on that address to create a new address, storing the new address in its memory, and transmitting the new address to a second other control unit; and
 - e) re-addressing whereupon one of said plurality of control units fails, a new or replacement unit will be installed and automatically re-address itself in the system by receiving an initial address from a previous or prior control unit, performing the mathematical operation on that initial address to produce a new address, and storing that new address in the memory as its newly present address in the control unit system.